

REMARKS

The Office Action dated August 19, 2005 has been reviewed and the application is amended in a manner believed to place same in condition for allowance. Reconsideration of the application is respectfully requested.

In summary, Claims 1 and 3 have been amended. Claims 2 and 4-6 have been cancelled. Claims 7-9 have been added. All of Claims 1, 3 and 7-9 are believed allowable.

Paragraph [0001] of the specification has been amended to reference the related U.S. patent applications by their serial number or patent number.

The rejection of Claims 1-6 under 35 USC §103 as being unpatentable over Wakashiro Teruo, JP Publication No. 11-343894 has been considered.

According to the present invention, a normal automatic stop is provided by the controller in response to certain conditions. After an automatic engine stop is cancelled due to activation of a direction indicator, however, a different condition is required in order to provide an engine stop as compared to the normal automatic stop condition. This arrangement is illustrated in Applicants' Figure 2.

Page 2, lines 5-11 of Applicants' specification discloses a situation, such as a traffic jam, wherein the turn signal can be shut off due to turning of the steering wheel. The vehicle can be driven a significant distance as the traffic approaches an intersection. Meanwhile, the engine must remain operating to provide sufficient acceleration for entering the intersection. Thus a greater travel distance without engine stop is required to ensure proper vehicle operation.

In contrast, Teruo discloses a prohibit condition for an engine idle stop control if 1) a direction indicator is activated or 2) a vehicle speed is less than 15 km/h (see paragraphs [0043], [0048] and [0078]). In Teruo, the direction indicator condition and the vehicle speed condition are considered as alternatives for prohibiting engine idle stop control.

The vehicle velocity required by Teruo is a prohibit condition that prevents engine stop if the velocity value is less than 15 km/hour. Teruo does not change the velocity value required to enable automatic stop of the engine after automatic stop is cancelled by activation of the direction indicator.

More particularly as to the specific claims, Claim 1 has been amended to include some features of cancelled Claim 2. Claim 1 recites an automatic stop/start controller for a vehicle that has a control unit which automatically stops the engine without operation of the ignition key when at least 1) a condition of the vehicle speed is less than a predetermined vehicle speed, 2) a distance of travel of the vehicle is more than or equal to a predetermined prohibit distance before stop, and 3) a direction indicator of the vehicle is deactivated. Claim 1 further recites that when the direction indicator automatically starts the engine, then the engine will be prohibited from stopping until "a distance traveled by the vehicle after the engine is automatically started due to activation of the direction indicator" is greater than or equal to "a predetermined automatic stop prohibit distance after automatic start" that is preset with a distance longer than "the automatic stop prohibit distance before stop".

Teruo does not disclose or suggest utilizing a distance value to prohibit stopping of the vehicle engine, much less a second different distance value after the direction indicator starts the engine. Instead, as discussed above, Teruo relies on the vehicle speed to permit engine idle stop.

The Office Action indicates that it would have been obvious to one of ordinary skill to measure a predetermined distance traveled, instead of measuring vehicle speed as in Teruo due to their equivalence. The Office Action further states that distance is a result of the vehicle speed parameter and that both measurements result in a determination that the vehicle has resumed normal travel.

Applicants' submit, however, that the two parameters are not equivalent. Velocity requires a time measurement to obtain a distance value. Further, a vehicle can be driven at a significant velocity for a very short distance and then suddenly stopped, for example by an operator seeing an approaching vehicle at the last second before entering into an intersection. Such an event may result in engine stop by the Teruo system without having the vehicle travel a significant distance.

As discussed above, Applicants' Claim 1 recites that after automatic engine start by operation of a direction indicator, the predetermined automatic stop prohibit distance after automatic start "is preset with a distance longer than the automatic stop prohibit distance before stop". There is no disclosure or suggestion in Teruo of providing two different vehicle speed values that prevent automatic engine stop much less two different minimum distances that prevent automatic stopping of the engine.

Further, Applicants' Claim 1 recites that the control unit automatically stops the engine without operation of the ignition key dependent on vehicle speed being less than or equal to a predetermined vehicle speed and a distance of travel of the vehicle being more than or equal to a predetermined automatic stop prohibit distance. Thus, Applicants' control unit for automatically stopping the engine determines both vehicle speed and vehicle distance.

As discussed above, Teruo discloses utilizing vehicle speed, and not distance traveled. While the rejection alleges that vehicle distance may be substituted for vehicle speed measurement, there is, however, no disclosure or suggestion in Teruo of providing both a vehicle speed condition and a vehicle travel distance condition to determine automatic stop of the vehicle engine.

For the above reasons independent Claim 1, and Claim 3 dependent therefrom, are believed allowable over Teruo.

Added Claims 7-9 are also believed allowable. Claim 7 recites that "after the automatic start of the engine due to activation of the direction indicator, the control unit provides a different stop condition for stopping the engine than the normal automatic stop condition". As discussed above, Teruo has an automatic stop condition and there appears to be no variation in the automatic stop condition whether an automatic start is caused by the direction indicator or by the vehicle speed condition. Therefore independent Claim 7, and Claim 8 dependent therefrom, are believe allowable.

Method Claim 9 recites a method for controlling an automatic stop and an automatic start of an internal combustion engine including the steps of automatically stopping the engine without operation of the ignition key when at least "a sensed vehicle speed is less than or equal to a predetermined vehicle speed; a sensed distance of travel of the vehicle is more than or equal to a predetermined automatic prohibit distance before stop; and a direction indicator of the vehicle is 'deactivated". As discussed above, Teruo does not disclose or suggest sensing both vehicle speed and distance of travel to determine automatic stop of an engine.

Claim 9 further recites the step of "after the engine is automatically started by activation of the direction indicator, preventing automatic stopping of the engine until the vehicle travels a predetermined prohibit distance that is greater than the predetermined automatic prohibit distance before stop". As discussed above, Teruo does not disclose or suggest two different stop prohibit distances and these distance conditions are not equivalent to the speed based system of Teruo.

For the above reasons, Claim 9 is believed allowable over Teruo.

In view of the above, the instant application is believed

to be in condition for allowance, and action toward that end
is respectfully solicited.

Respectfully submitted,



Brian R. Tumm

BRT/ad

FLYNN, THIEL, BOUTELL	Dale H. Thiel	Reg. No. 24 323
& TANIS, P.C.	David G. Boutell	Reg. No. 25 072
2026 Rambling Road	Ronald J. Tanis	Reg. No. 22 724
Kalamazoo, MI 49008-1631	Terryence F. Chapman	Reg. No. 32 549
Phone: (269) 381-1156	Mark L. Maki	Reg. No. 36 589
Fax: (269) 381-5465	Liane L. Churney	Reg. No. 40 694
	Brian R. Tumm	Reg. No. 36 328
	Steven R. Thiel	Reg. No. 53 685
	Donald J. Wallace	Reg. No. 43 977
	Kevin L. Pontius	Reg. No. 37 512
	Sidney B. Williams, Jr.	Reg. No. 24 949

Encl: Postal Card

136.07/05